

*This guide is for potential applicants to the U.S. National Science Foundation (NSF) Small Business Innovation Research (SBIR) program. The document identifies unique aspects of the NSF SBIR program, describes the nature of its topics, and links readers to additional agency resources. When used in conjunction with MTIP's [Profile of a Good Candidate](#), this guide will help prospective applicants determine quickly whether to pursue funding under the NSF SBIR program and how best to approach a proposal.*



## THE SBIR/STTR PROGRAMS

*The federal Small Business Innovation Research (SBIR) program is a source of early-stage R&D seed capital for small, tech-based U.S. companies. Through 11 different participating agencies, this program offers grants or contracts to support serious R&D and commercialization of technologies of interest both to the government and to the company.*

SBIR funding does not have to be matched or repaid by the small business. The award monies can be used to fund most costs associated with the R&D project and up to 7% profit. The company maintains ownership of any new intellectual property, and the government retains certain rights to use the technology.

SBIR is a three-phase program. Phase I is to establish the technical and often commercial feasibility of the proposed technology. Phase I awards can be as high as \$225,000, normally for a period of up to nine months. Phase II is to perform more in-depth R&D on the technology, typically developing and demonstrating a prototype. Phase II awards range as high as \$1.5 million for a period of up to two years. The objective of Phase III is commercialization of the technology. This phase is non-funded, though some agencies offer extra assistance in the form commercialization support programs.

In SBIR Phase I, up to 33% of the direct plus indirect costs of the budget may go to outside consultants/subcontractors; in Phase II, this figure rises to 50%. In addition, for both Phase I and II, the Principal Investigator must be greater than 50% employed by the company from the time of contracting throughout the duration of the project.

Each of the 11 participating agencies operates its own version of the SBIR. Within any given agency, the rules and requirements frequently change from one solicitation to the next. Prospective applicants must monitor closely each targeted agency's solicitations.

Overall, agencies report that the chance of winning a Phase I award ranges from ~7% to ~15%. Well-qualified Montana applicants can substantially improve these odds by working closely with the no-cost services offered by Montana Technology Innovation Partnership (MTIP). If not currently enrolled for MTIP services, see the information box at the end of this Guide.

## NSF SBIR PROGRAM

*NSF is an independent Federal agency responsible for the overall health of science and engineering across all disciplines. Its SBIR program information can be viewed at: <http://www.nsf.gov/eng/iip/sbir/>. NSF's SBIR budget is presently about \$120M, with 630 small businesses funded in 2012 alone. The median business awardee is 4 years old with 5 employees, clearly making this a suitable program for Montana small companies.*

The NSF SBIR mission is to support small business R&D that offers transformational technology to yield significant societal or commercial impact. The agency solicitation seeks responsiveness to societal needs, with promise to increase the competitive capability of industry and sensitivity to solving "real" problems driven by critical market requirements. These are highly important criteria to bear in mind when crafting an NSF SBIR proposal.

Proposals are submitted through the NSF grants FastLane system in response to topics detailed in bi-annual solicitations. The agency funds Phase I awards at \$150,000 for a 6-month work plan, and Phase II at \$750,000 for a 2-year work plan. The typical deadlines for NSF's two solicitations are in June and December.

Phase IB and IIB options can be requested by an awardee for supplemental funds to bridge the interim period between Phase I and Phase II, or to extend an active Phase II grant. These opportunities require matching funds to be obtained from a third party. The NSF also offers Small Business Technology Transfer (STTR) opportunities concurrently with the SBIR solicitations. You can view more about the STTR program in the MTIP guide entitled [“SBIR VS. STTR – Similar but Different Funding Programs.”](#)

## IDENTIFYING AN APPROPRIATE TOPIC

---

*NSF identifies broad areas of interest for SBIR that conform to the high-technology investment sector’s interests. Its four topic areas have remained the same for years and are listed below. However, multiple sub-topics under each broad area can vary from one solicitation to the next. Sub-topics require careful review within the context of the broader topic area, as there may appear to be some overlap. Interaction with program personnel can help direct an applicant to the best program review panel.*

The four NSF technology thrust areas are:

- Biological and Chemical Technologies
- Education Applications
- Electronics, Information and Communication Technologies
- Nanotechnology, Advanced Materials, and Manufacturing

*Following are examples of projects that are not acceptable to NSF (per the 2014 program solicitation): Proposed efforts directed toward systems studies; market research; commercial development of existing products or proven concepts; straightforward engineering design for packaging; laboratory evaluations; incremental product or process improvements; evolutionary optimization of existing products; and evolutionary modifications to broaden the scope of an existing product.*

## CONTACTING THE AGENCY

---

*Applicants are strongly encouraged to communicate with the NSF program officer listed for the selected proposal sub-topic. A 2-page executive summary should be provided to facilitate their ability to gauge responsiveness to the solicitation. Contact is permitted via email at any time before the submission deadline. However, program officer availability may be limited as the proposal submission deadline is approached.*

The NSF solicitation and topics state that the Executive Summary should include background on: 1) company/team including experience with previous SBIR awards, 2) market opportunity, 3) technology/innovation, and 4) competition. Use these specifically requested areas as subtitles in the document. It can then be sent with an email in which you ask questions to determine suitability for the selected topic.

## PREPARING/SUBMITTING THE PROPOSAL

---

*The purpose of the proposal is to provide sufficient information to persuade reviewers that the proposed research offers a unique and sound approach to addressing the need expressed in the NSF announcement. The proposal should be written at a level of quality suitable for publication. Following are general recommendations for ways in which applicants can enhance their chances for success:*

- **Start early.** Engagement in the SBIR program for any agency requires a company to have a DUNS number and a Taxpayer Identification Number (e.g. an EIN or SSN), and to register at [www.sam.gov](http://www.sam.gov) using the name of the company under which you will submit your application. A Small Business Administration registration is also now required of all SBIR applicants at [www.sbir.gov/registration](http://www.sbir.gov/registration). NSF accepts proposal submissions and manages awards via its FastLane system which is located at <https://www.fastlane.nsf.gov>. It can take several days to complete registrations if you have not already established your company as a federal contractor. Therefore, initiate this action well in advance of proposal submission.

- **Dive into planning.** Many aspects of the proposal can be planned and even drafted well before the NSF ever releases its announcement. Valuable insights can be gained from reviewing past award abstracts and the websites of the successful applicants. NSF awards can be searched at: <http://www.nsf.gov/awardsearch/advancedSearch.jsp>.
- **Read the entire solicitation.** Retrieve the program solicitation as soon as it is available and determine if your technology is a fit with the current topic guidelines. One person on the proposal team must be responsible for reading the instructions thoroughly, highlighting all the major and minor requirements, and initiating a proposal template.
- **Develop a project plan that envisions both the Phase I and the Phase II R&D activities.** Sharpen the proposed Phase I objectives and outline a technical work plan. Review these pieces to determine whether the project matches well with the topic and agency guidelines. Give careful consideration to selection of the project investigators, including consultants and/or subcontractors. There needs to be well-credentialed expertise on the project team for every aspect of the work being proposed. Conduct a team meeting to get full buy-in on the work plan AND on the proposal-writing plan. Develop a schedule and assign responsibilities for completion of the proposal. Immediately start the process of collecting team Curriculum Vitae and any required letters of support.
- **Obtain an outside, third-party review by MTIP.** Regardless of the proposal author's experience with proposal writing, this step helps ensure that the proposal is fully responsive to the instructions. Even the most experienced authors have a tendency to get "off point" as they work through the details and editing process. An outside eye can catch the drift and proposal non-compliance to solicitation requirements. A reviewer knowledgeable about the NSF SBIR program will invariably identify meaningful ways in which to enhance both the presentation and the content of the proposal. There is strong evidence that involving MTIP in the proposal-preparation process significantly improves the chance of funding.
- **Submit early.** Applicants should plan to submit their proposals at least two days prior to the final due date. Early submission avoids the possibility of server overload, which has hampered agencies in the past. It also gives applicants ample time to resolve any problems that arise during the electronic submission process.

## READY FOR THE NEXT STEP?

This agency-specific SBIR guide has been prepared by the Montana Technology Innovation Partnership (MTIP) and does not imply endorsement from the U.S. National Science Foundation. A program of the Montana Department of Commerce, MTIP provides free coaching to Montana technology-based companies seeking help in applying to federal and state R&D and commercialization funding programs. For more information, contact the MTIP Program Manager at (406) 841-2749 or visit MTIP's website at [www.mtip.mt.gov](http://www.mtip.mt.gov).

